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Lone Andersen

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EXAMINER

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/528,926  
Filing Date: December 16, 2005  
Appellant(s): ANDERSEN ET AL.

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Todd M. Oberdick  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed July 15, 2010, appealing from the Office action mailed February 17, 2010.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:  
1, 2, 4-6, 8, 10-13, and 15-66.

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

**(7) Claims Appendix**

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

**(8) Evidence Relied Upon**

6,013,287	Bunczek et al.	1-2000
6,441,126	Cook et al.	8-2002

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6,153,231	Li	11-2000
5,433,960	Meyers	7-1995
5,672,367	Grijpma et al.	9-1997

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 4-6, 8, 10-13, 15-17, 20-43, 46, 51-53, and 63-66 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Bunczek et al. (6,013,287).

Regarding claims 1, 2, 5, 8, 12, 16, 22, 23-27 and 63-66, Bunczek et al. disclose a chewing gum comprising at least one polyester polymer, wherein at least one of said polyester polymers is produced through the reaction of an alcohol or derivative thereof and an acid or derivative thereof. The teaching “at least one” is considered to meet Appellant’s claims to two biodegradable polymers as “at least one” clearly indicates that there could be more than one of the polymers present. The chewing gum also comprises a polyester polymer functioning as an elastomer plasticizer (col. 9 lines 41-44). Stated advantages of the invention are a gum base that is biodegradable, and that traditional elastomers and elastomer plasticizers are replaced with other polymers, indicating that the chewing gum of the invention may be substantially or totally free of non-biodegradable polymers (col. 2 lines 61-64).

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Regarding claim 2, the polymers may be hydrophilic, depending on the amount of fatty acids/alcohols utilized in the invention (col. 3 lines 10-64). A less hydrophobic polyester is understood to be more hydrophilic.

Regarding claims 22-27, the polyester of Bunczek et al. may be used as elastomers and/or elastomer plasticizers in a gum base, comprising up to 80% by weight of the gum base. Other chewing gum ingredients include softeners and fillers (col. 9 lines 54-55).

Regarding claims 28-34, Bunczek et al. teach the chewing gum comprising flavoring agents in an amount ranging from about 0.1 to 15% by weight, preferably about 0.2 to 5% by weight. A number of conventional chewing gum flavoring agents are taught (col. 11 lines 57-67).

Regarding claims 35-40, sweeteners are taught for use in the chewing gum in an amount ranging from about 5% to 95% by weight of the gum. High-intensity sweeteners may be used in an amount ranging from about 0.02 to 8% by weight. High intensity sweeteners taught include sucralose, aspartame and alitame (col. 11 lines 11-14; 26-31; 39-45).

Regarding claims 41-43, the chewing gum may comprise softener in an amount ranging from about 0.5 to 15% by weight. Softeners include lecithin (col. 11 lines 3-5). Regarding claims 51 and 52, the chewing gum base may comprise filler in an amount ranging from 4 to 35 weight % (col. 9 line 67). This would result in the filler in the range as claimed in the chewing gum.

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Regarding claim 53, the chewing gum may comprise desired color (col. 10 line 67).

Bunczek et al. are silent as to the  $M_n$  of their different biodegradable polymers functioning as elastomers and elastomer plasticizers in their invention. They are also silent as to the  $T_g$  of the different polymers.

However, given that the polyester polymers as taught by Bunczek et al. are to be used in chewing gums in place of conventional elastomers, elastomer plasticizers, and resins, the same functions as claimed by Appellants, it would have been considered obvious to utilize polymers having molecular weights ( $M_n$ ) and  $T_g$ s in the ranges as claimed, absent any convincing arguments or evidence to the contrary. The  $M_n$  and  $T_g$  of the polymers used in chewing gums are known to affect the textural/chewing properties of the gum. One of ordinary skill would have been able to optimize the  $M_n$  and  $T_g$  of the polymers utilized in the chewing gum through no more than routine experimentation in order to achieve the desired chewing properties.

Claims 18, 19, and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bunczek et al. (6,013,287) in view of Grijpma et al. (5,672,367).

Bunczek et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Bunczek et al. are silent as to their chewing gum comprising polyester polymers wherein the polymer is obtained by the polymerization of cyclic esters.

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Regarding claims 18, 19, and 47-50, Grijpma et al. teach biodegradable polyester polymers for use in chewing gums produced from lactones in combination with cyclic esters as claimed by Appellants. Specific monomers taught to be polymerized include  $\epsilon$ -caprolactone and trimethylene carbonate (col. 1 lines 50-55).

One of ordinary skill in the art at the time the invention was made wishing to provide a chewing gum substantially free from non-biodegradable polymers would have found it obvious to combine the polymers of Bunczek et al. with the polymers of Grijpma et al. in order to provide a chewing gum having desirable chewing properties while at the same time being substantially biodegradable. As all of the polymers of the instant claims are known in the prior art for inclusion in chewing gums, one of ordinary skill would have been able to combine them into one chewing gum base in order to employ different properties of the polymers to provide a chewing gum product having the most favorable chewing and degradation properties. In the absence of unexpected results, this combination of known polymers is considered to be no different than the combination of non-biodegradable polymers for inclusion in chewing gums.

Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bunczek et al. (6,013,287) in view of Li et al. (6,153,231).

Bunczek et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Bunczek et al. are silent as to their chewing gum comprising active agents.



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Li et al. teach pharmaceutical agents to be added to chewing gums comprising biodegradable polymers (col. 7, lines 60-61).

One of ordinary skill in the art at the time the invention was made wishing to incorporate active (pharmaceutical) agents into the chewing gum of Bunczek et al. would have found it obvious to include pharmaceutical agents as taught by Li et al. as it was known in the art to include active ingredients in chewing gum preparations. Undue experimentation would not have been required, and there would have been a reasonable expectation that the chewing gum of Bunczek et al. would have been a suitable delivery medium for the desired active ingredients.

Claims 57-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bunczek et al. (6,013,287) in view of Meyers (5,433,960).

Bunczek et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Bunczek et al. are silent as to their chewing gum being coated.

Meyers teaches coated chewing gum, wherein the coating comprises polyols, film forming agents, and additives as claimed (col. 3 lines 46-53). The coating may also comprise sugar-free coating agents (col. 10 lines 49-54).

One of ordinary skill in the art at the time the invention was made would have found it obvious to coat the chewing gum of Bunczek et al. with a coating as taught by Meyers in order to provide storage stability to the chewing gum since it is well known to coat chewing gum products with each of appellant's claimed coating materials in order

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to achieve this objective. Additionally, coating the chewing gum of Bunczek et al. would not have required undue experimentation as one of ordinary skill would have been familiar with the coating of chewing gum products as claimed.

Claims 1, 2, 4-6, 8, 10-13, 15-17, 20-43, 46, 51-53, and 63-66 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Cook et al. (6,441,126).

Regarding claims 1, 2, 5, 8, 12, 16, 22, 23-27 and 63-66, Cook et al. disclose a chewing gum comprising at least one polyester polymer. The teaching “at least one” is considered to meet Appellant’s claims to two biodegradable polymers as “at least one” clearly indicates that there could be more than one of the polymers present. The polyester polymers may function as elastomers and/or elastomer plasticizer (Abstract; col. 7 lines 56-60). The polyester of Cook et al. may be used as elastomers and/or elastomer plasticizers in a gum base, comprising up to 80% by weight of the gum base. Other chewing gum ingredients include softeners and fillers (col. 7 lines 60-65).

Regarding claims 28-34, Cook et al. teach the chewing gum comprising flavoring agents in an amount ranging from about 0.1 to 15% by weight. Any known flavoring agent may be utilized in the composition to provide the desired flavor (col. 10 lines 13-25).

Regarding claims 35-40, sweeteners are taught for use in the chewing gum in an amount ranging from about 5% to 95% by weight of the gum. High-intensity sweeteners may be used in an amount ranging from about 0.02 to 8% by weight. High intensity sweeteners taught include acesulfame and alitame (col. 9 lines 31-35; 47-65).

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Regarding claims 41-43, the chewing gum may comprise softeners, including lecithin, in an amount ranging from about 0.5 to 15% by weight (col. 9 lines 23-25).

Regarding claims 51 and 52, the chewing gum base may comprise filler in an amount ranging from 4 to 35 weight % (col. 8 line 20). This would result in the filler in the range as claimed in the chewing gum.

Regarding claim 53, the chewing gum may comprise the desired color (col. 9 lines 16-22).

Cook et al. are silent as to the  $M_n$  of their different biodegradable polymers functioning as elastomers and elastomer plasticizers in their invention. They are also silent as to the  $T_g$  of the different polymers.

However, given that the polyester polymers as taught by Cook et al. are to be used in chewing gums in place of conventional elastomers and elastomer plasticizers, the same function as claimed by Appellants, it would have been considered obvious to utilize polymers having molecular weights ( $M_n$ ) and  $T_g$  s in the ranges as claimed, absent any convincing arguments or evidence to the contrary. The  $M_n$  and  $T_g$  of the polymers used in chewing gums are known to affect the textural/chewing properties of the gum. One of ordinary skill would have been able to optimize the  $M_n$  and  $T_g$  of the polymers utilized in the chewing gum through no more than routine experimentation in order to achieve the desired chewing properties.

Claims 18, 19, and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (6,441,126) in view of Grijpma et al. (5,672,367).

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Cook et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Cook et al. are silent as to their chewing gum comprising polyester polymers wherein the polymer is obtained by the polymerization of cyclic esters.

Regarding claims 18, 19, and 47-50, Grijpma et al. teach biodegradable polyester polymers for use in chewing gums produced from lactones in combination with cyclic esters as claimed by Appellants. Specific monomers taught to be polymerized include  $\epsilon$ -caprolactone and trimethylene carbonate (col. 1 lines 50-55).

One of ordinary skill in the art at the time the invention was made wishing to provide a chewing gum substantially free from non-biodegradable polymers would have found it obvious to combine the polymers of Cook et al. with the polymers of Grijpma et al. in order to provide a chewing gum having desirable chewing properties while at the same time being substantially biodegradable. As all of the polymers of the instant claims are known in the prior art for inclusion in chewing gums, one of ordinary skill would have been able to combine them into one chewing gum base in order to employ different properties of the polymers to provide a chewing gum product having the most favorable chewing and degradation properties. In the absence of unexpected results, this combination of known polymers is considered to be no different than the combination of non-biodegradable polymers for inclusion in chewing gums.

Claims 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (6,441,126) in view of Li et al. (6,153,231).

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Cook et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Cook et al. are silent as to their chewing gum comprising active agents.

Li et al. teach pharmaceutical agents to be added to chewing gums comprising biodegradable polymers (col. 7, lines 60-61).

One of ordinary skill in the art at the time the invention was made wishing to incorporate active (pharmaceutical) agents into the chewing gum of Cook et al. would have found it obvious to include pharmaceutical agents as taught by Li et al. as it was known in the art to include active ingredients in chewing gum preparations. Undue experimentation would not have been required, and there would have been a reasonable expectation that the chewing gum of Cook et al. would have been a suitable delivery medium for the desired active ingredients.

Claims 57-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cook et al. (6,441,126) in view of Meyers (5,433,960).

Cook et al. teach a chewing gum comprising at least one polyester polymer as detailed above.

Cook et al. are silent as to their chewing gum being coated.

Meyers teaches coated chewing gum, wherein the coating comprises polyols, film forming agents, and additives as claimed (col. 3 lines 46-53). The coating may also comprise sugar-free coating agents (col. 10 lines 49-54).

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One of ordinary skill in the art at the time the invention was made would have found it obvious to coat the chewing gum of Bunczek et al. with a coating as taught by Meyers in order to provide storage stability to the chewing gum since it is well known to coat chewing gum products with each of appellant's claimed coating materials in order to achieve this objective. Additionally, coating the chewing gum of Bunczek et al. would not have required undue experimentation as one of ordinary skill would have been familiar with the coating of chewing gum products as claimed.

Claims 1, 2, 4-6, 8, 10-13 and 15-66 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 10, 11, 13-18, 24-26, 28-39 and 40-54 of copending Application No. 11/088,109. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim chewing gum comprising at least two different biodegradable polymers. The different glass transition temperatures and molecular weights of the instant claims are considered to be obvious over the conflicting claims where the at least two different biodegradable polymers perform the different functions of elastomer and elastomer plasticizer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### **(10) Response to Argument**

The Examiner notes that the provisional obviousness-type double-patenting rejection of claims 1, 2, 4-6, 8, 10-13, and 15-66 is not being appealed.

Regarding the 103 rejection of claims 1, 2, 4-6, 8, 10-13, 15-17, 20-43, 46, 51-53, and 63-66 over Bunczek et al.

Appellant argues that Bunczek has no purpose of obtaining a chewing gum without non-degradable polymers (Remarks, p. 13).

This argument is not persuasive. While Appellant cites the passage in Bunczek where it is stated that “an advantage of the present invention is to replace traditional elastomers or elastomer plasticizers” (col. 2 lines 62-64), the Examiner notes that Bunczek also teaches “traditionally used elastomers and elastomer plasticizers can be replaced with these edible polyesters” (col. 1 lines 51-53) and “polyesters have improved physical properties as base ingredients replacing elastomers, elastomer plasticizers and resins” (col. 4 lines 4-6). Based on the entirety of the teachings of Bunczek, it cannot be said that one of ordinary skill would not have been motivated to replace the entirety of traditional elastomers and elastomer plasticizers with the polyester polymers of Bunczek. Bunczek clearly provides motivation to one of ordinary skill to provide a chewing gum substantially or totally free of non-biodegradable polymers.

Appellant argues that no part of Bunczek provides any direction for using two degradable polymers in a piece of chewing gum (Remarks, p. 14).

The argument that Bunczek provides no direction for using two degradable polymers in a piece of chewing gum is not persuasive. As noted above, Bunczek teaches "traditionally used elastomers and elastomer plasticizers can be replaced with these edible polyesters" (col. 1 lines 51-53) and "polyesters have improved physical properties as base ingredients replacing elastomers, elastomer plasticizers and resins" (col. 4 lines 4-6). From these teachings, Bunczek clearly provides direction to utilize more than one (e.g. two) biodegradable polymers to replace traditional chewing gum elastomers and elastomer plasticizers.

Appellant argues that Bunczek provides insufficient direction for selection of the  $T_g$  and molecular weight of the polymers to be used in chewing gum (Remarks, pp. 14-16).

Regarding the lack of direction for choice of  $T_g$  and molecular weight of the polymers of Bunczek, as the polymers of Bunczek are to be used in the same manner as the polymers of the instant invention, that is, to replace traditional elastomers and elastomer plasticizers in chewing gum bases, it would be expected that the polymers of Bunczek would have  $T_g$  and molecular weights falling within the ranges as claimed in order to provide a chewing gum product comprising biodegradable polymers while maintaining chewing characteristics of chewing gums comprising traditional chewing gum polymers.



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Further, as stated in *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977): Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an appellant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. [citation omitted] Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products.

Appellant has not provided convincing arguments or evidence that the polymers of Bunczek do not possess  $T_g$  and  $M_n$  within the ranges claimed. It is also noted that the ranges of  $T_g$  and molecular weights of claim 1 are very broad and encompass a vast number of polymer combinations. To argue that there is no direction from Bunczek to arrive at polymers as required by the instant claims when the instant claims provide for such a large range of polymers is not convincing.

Appellant argues that "specific and unexpected benefits" provided by the claimed invention are not taught in Bunczek (Remarks, p. 17).

This argument is not persuasive. The Examiner again notes that Bunczek clearly provides for the inclusion of more than one polyester polymer to replace traditional polymers in chewing gum bases, as detailed above. The advantages noted by Bunczek include an "improved chewing gum formulation" and a gum base that is biodegradable (col. 2 lines 51-61). Again, as the biodegradable polymers of Bunczek

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are the same polyester polymers as required by the instant invention, and used in the same manner in chewing gums, it cannot be said that the polymers would not have had  $T_g$  or molecular weights as claimed.

Certainly, one following the teachings of Bunczek to provide a gum base that is biodegradable would have found it obvious to replace all non-biodegradable polymers with biodegradable polymers.

Appellant argues that Bunczek is “irrelevant” prior art as Bunczek teaches examples with only one biodegradable polymer (Remarks, pp. 20-21).

Bunczek is not irrelevant prior art. Again, Bunczek clearly allows for the inclusion of more than one (e.g. two) biodegradable polymers in chewing gums. One of ordinary skill wanting to provide a biodegradable chewing gum base, as is taught by Bunczek (col. 2 lines 59-61), would have found it obvious to utilize only biodegradable polymers in the chewing gum base.

Appellant argues that one of ordinary skill reading Bunczek would not have found it obvious to use the polymers of Grijpma (Remarks, pp. 21-22).

This argument is not persuasive. Both Bunczek and Grijpma are concerned with providing biodegradable chewing gum bases. The combination of biodegradable polymers in chewing gum bases, where the polymers are taught in the prior art to be suitable for inclusion in chewing gum bases, in order to provide a chewing gum base comprising a blend of biodegradable polymers, is considered to be obvious. Appellant

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is doing no more than employing known polymers in a previously reported manner to provide a biodegradable chewing gum base.

Appellant argues that the combination of Bunczek and Li would not lead one of ordinary skill to add the agents of claim 45 to a biodegradable chewing gum (Remarks, p. 22).

This argument is not persuasive. Instant claim 45 is to a multitude of known pharmaceutical agents. Bunczek teaches chewing gums comprising biodegradable polymers as detailed above. Li et al. teach pharmaceutical agents to be added to chewing gums comprising biodegradable polymers (col. 7, lines 60-61).

One of ordinary skill in the art at the time the invention would have found it obvious to include pharmaceutical agents as taught by Li et al. in the chewing gum of Bunczek as it was known in the art to include active ingredients in chewing gum. The selection of any one of the claimed pharmaceutical agents is considered to be obvious as the agents are being employed for their known function as pharmaceutical agents, depending on the treatment to be administered.

Appellant argues that one of ordinary skill would not look to Meyers to coat the chewing gum of Bunczek as the coating of Meyers is aqueous and would be expected to degrade the biodegradable polymers (Remarks, p. 23).

This argument is not persuasive. Meyers teaches the purpose of their invention is to provide a chewing gum with increased moisture stability at ambient conditions

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(Abstract). From this, one of ordinary skill would have understood that the coating of Meyers improves the stability of the chewing gum, and would have been expected to provide chewing gums comprising biodegradable polymers, as taught by Bunczek, with improved moisture stability. The coating would not have been expected to degrade the biodegradable polymers. Indeed, while it is desirable to have biodegradable polymers that degrade under environmental conditions (e.g. moisture or sunlight), it is recognized that the gum is intended first to be chewed, resulting in exposure to moisture (i.e. saliva). A biodegradable polymer with such a sensitivity to moisture as to be degraded by the coating process of Meyers, as Appellant alleges, would not be expected to be suitable for use in a chewing gum, as it would quickly break down upon exposure to saliva in the mouth and be rendered unsuitable for chewing. As the biodegradable polymers of Bunczek are taught for use in chewing gums, one would expect that they would tolerate a coating process as known in the art without significant degradation.

Appellant argues that Cook does not provide any direction towards using two degradable polymers in chewing gum (Remarks, pp. 24-25).

This argument is not persuasive. Cook specifically teaches that their invention provides for “biodegradable chewing gum bases (col. 1 lines 65-66). As noted by Appellant, Cook teaches that the polymers of their invention may be used as both elastomers and/or elastomer plasticizers (col. 7 lines 59-60). Cook then goes on to teach additional chewing gum ingredients and methods of making (col. 8 line 1-col. 10 line 47). Based on the entirety of the teachings of Cook, it cannot be said that one of

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ordinary skill would not have been motivated to replace the entirety of traditional elastomers and elastomer plasticizers with the polyester polymers of Cook. Cook clearly provides motivation to one of ordinary skill to provide a chewing gum substantially or totally free of non-biodegradable polymers in order to provide a biodegradable chewing gum base.

Appellant argues that no part of Cook provides any direction for using two degradable polymers in a piece of chewing gum (Remarks, pp. 25-26).

This is not persuasive. As noted above, Cook teaches the invention as providing a biodegradable chewing gum base, and using the polymers in place of traditional (i.e. non-biodegradable) elastomers and elastomer plasticizers. From these teachings, Cook clearly provides direction to utilize more than one (e.g. two) biodegradable polymers to replace traditional chewing gum elastomers and elastomer plasticizers.

Appellant argues that Cook provides insufficient direction for selection of the  $T_g$  and molecular weight of the polymers to be used in chewing gum (Remarks, pp. 25-27).

Regarding the lack of direction for choice of  $T_g$  and molecular weight of the polymers of Cook, as the polymers of Cook are to be used in the same manner as the polymers of the instant invention, that is, to replace traditional elastomers and elastomer plasticizers in chewing gum bases, it would be expected that the polymers of Cook would have  $T_g$  and molecular weights falling within the ranges as claimed in order to provide a chewing gum product comprising biodegradable polymers while maintaining chewing characteristics of chewing gums comprising traditional chewing gum polymers.

Further, as stated in *In re Best*, 562 F.2d 1252, 1255 (CCPA 1977): Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an appellant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. [citation omitted] Whether the rejection is based on "inherency" under 35 U.S.C. § 102, on "prima facie obviousness" under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO's inability to manufacture products or to obtain and compare prior art products.

Appellant has not provided convincing arguments or evidence that the polymers of Cook do not possess  $T_g$  and Mn within the ranges claimed. It is also noted that the ranges of  $T_g$  and molecular weights of claim 1 are very broad and encompass a vast number of polymer combinations. To argue that there is no direction from Cook to arrive at polymers as required by the instant claims when the instant claims provide for such a large range of polymers is not convincing.

Appellant argues that "specific and unexpected benefits" provided by the claimed invention are not taught in Cook (Remarks, pp. 28-29).

This argument is not persuasive. The Examiner again notes that Cook clearly provides for the inclusion of more than one polyester polymer to replace traditional polymers in chewing gum bases, as detailed above. The advantages noted by Cook include a gum base that is biodegradable (col. 1 lines 65-66). Again, as the biodegradable polymers of Cook are the same polyester polymers as required by the

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instant invention, and used in the same manner in chewing gums, it cannot be said that the polymers would not have  $T_g$  or molecular weights as claimed.

Certainly, one following the teachings of Cook to provide a gum base that is biodegradable would have found it obvious to replace all non-biodegradable polymers with biodegradable polymers.

Appellant argues that Cook is “irrelevant” prior art as Cook teaches examples with only one biodegradable polymer (Remarks, pp. 31-32).

Cook is not irrelevant prior art. Again, Cook clearly allows for the inclusion of more than one (e.g. two) biodegradable polymers in chewing gums, with these polymers to be employed as elastomers and elastomer plasticizers. One of ordinary skill wanting to provide a biodegradable chewing gum base, as is taught by Cook, would have found it obvious to utilize only biodegradable polymers in the chewing gum base.

Appellant argues that one of ordinary skill reading Cook would not have found it obvious to use the polymers of Grijpma (Remarks, p. 32).

This argument is not persuasive. Both Cook and Grijpma are concerned with providing biodegradable chewing gum bases. The combination of biodegradable polymers in chewing gum bases, where the polymers are taught in the prior art to be suitable for inclusion in chewing gum bases, in order to provide a chewing gum base comprising a blend of biodegradable polymers, is considered to be obvious. Appellant is doing no more than employing known polymers in a previously reported manner to provide a biodegradable chewing gum base.

Appellant argues that the combination of Cook and Li would not lead one of ordinary skill to add the agents of claim 45 to a biodegradable chewing gum (Remarks, p. 33).

This argument is not persuasive. Instant claim 45 is to a multitude of known pharmaceutical agents. Cook teaches chewing gums comprising biodegradable polymers as detailed above. Li et al. teach pharmaceutical agents to be added to chewing gums comprising biodegradable polymers (col. 7, lines 60-61).

One of ordinary skill in the art at the time the invention would have found it obvious to include pharmaceutical agents as taught by Li et al. in the chewing gum of Cook as it was known in the art to include active ingredients in chewing gum. The selection of any one of the claimed pharmaceutical agents is considered to be obvious as the agents are being employed for their known function as pharmaceutical agents, depending on the treatment to be administered.

Appellant argues that one of ordinary skill would not look to Meyers to coat the chewing gum of Cook as the coating of Meyers is aqueous and would be expected to degrade the biodegradable polymers (Remarks, pp. 33-34).

This argument is not persuasive. Meyers teaches the purpose of their invention is to provide a chewing gum with increased moisture stability at ambient conditions (Abstract). From this, one of ordinary skill would have understood that the coating of Meyers improves the stability of the chewing gum, and would have been expected to



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provide chewing gums comprising biodegradable polymers, as taught by Cook, with improved moisture stability. The coating would not have been expected to degrade the biodegradable polymers. Indeed, while it is desirable to have biodegradable polymers that degrade under environmental conditions (e.g. moisture or sunlight), it is recognized that the gum is intended first to be chewed, resulting in exposure to moisture (i.e. saliva). A biodegradable polymer with such a sensitivity to moisture as to be degraded by the coating process of Meyers, as Appellant alleges, would not be expected to be suitable for use in a chewing gum, as it would quickly break down upon exposure to saliva in the mouth and be rendered unsuitable for chewing. As the biodegradable polymers of Cook are taught for use in chewing gums, one would expect that they would tolerate a coating process as known in the art without significant degradation.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 1781

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Nikki H. Dees/  
Examiner, Art Unit 1781

Conferees:

/Keith D. Hendricks/  
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